CROSS-CANADA DISEASE REPORT

RAPPORT DES MALADIES DIAGNOSTIQUÉES AU CANADA

Atlantic Canada

Cold water winter lesions in Atlantic Salmon

Severe ulcerative, necrotizing bacterial dermatitis, panniculitis and myositis occurred in at least six Atlantic salmon cage sites in New Brunswick in 1990. Mortality was due to invasion by opportunistic bacteria, or osmotic failure due to excessive ulceration. Mortality up to 10% on individual cages occurred, compared to the normal rate of 0.53% in other cages and other environments during the same three-month period. Histological examination of lesions collected in early March, when water temperatures were 1°C and food consumption was 0.2% of body weight per day, showed no evidence of a healing response. Filamentous gram-negative rods were found in impression smears of all lesions, but referral laboratories were unable to culture the bacteria.

Requirement of ascorbic acid in the diet of salmonids is stated to be 100 mg/kg diet (1). This may well be adequate when fish are eating 1.3% of body weight in 10°C, but may not be adequate in water at 1°C when fish are swimming against the six-meter tides of the Bay of Fundy. In March, in an attempt to stimulate healing, the vitamin C content of the diet was increased from 600 mg/kg of feed to 3,000 mg/kg. Histological samples were collected periodically until April 30, 1990. Healing was not observed until April 30, but this also corresponded with water temperatures that rose above 4°C on April 30. Several nutrients other than vitamin C are involved in wound healing. Zinc plays an important role in wound healing of terrestrial animals, but preliminary work on previous outbreaks of cold water winter lesions did not reveal any zinc deficiency. Concentrations of other micronutrients involved in wound repair in various tissues of Atlantic salmon need to be examined.

Investigators in Norway are also working on possible reasons for delayed wound healing in Atlantic salmon, and are specifically investigating a possible carbohydrate overload that impairs healing at low water temperatures (I. Thomesen. Personal Communication, June 1990). Additional work is needed to discover factors that can economically prevent or treat these cold water winter lesions.

Reference

1. Anonymous. Nutrient Requirement of Cold Water Fishes. Washington: National Academy Press, 1983: 41.

***John O'Halloran**, New Brunswick Department of Fisheries and Aquaculture, 268 Milltown Blvd., St. Stephen, New Brunswick E3L 1H6; **Eric Saulnier**, Aqua Fish Farms Ltd., St. George, New Brunswick E0G 2Y0; **Keith Were**, Aquaculture Division, Connors Bros. Ltd., Blacks Harbour, New Brunswick E0G 1H0; **David Groman**, Department of Pathology and Microbiology, Atlantic Veterinary College, 550 University Avenue, Charlottetown, Prince Edward Island C1A 4P3; **Santosh Lall**, Department of Fisheries and Oceans, 1707 Lower Water St., Halifax, Nova Scotia B3J 2S7*

Quebec

Isolation of *Staphylococcus felis* from cases of external otitis in cats

A coagulase-negative *Staphylococcus* sp. was isolated in large numbers and in almost pure culture from two different cases of external otitis in cats. Both isolates were unpigmented and had very weak hemolytic activity on bovine blood agar media. They were urease, sucrose, mannose and trehalose positive, and maltose, mannitol and ribose negative. They did not grow on Mueller-Hinton agar containing 2 U of bacitracin/mL. These isolates were identified as *Staphylococcus felis*, a recently recognized species (1).

In cats, *S. felis* has been associated with a variety of infections such as external otitis, cystitis, abscesses, wounds, and other skin infections (1). This microorganism has not been found in other animal species. It can be differentiated from other novobiocin-susceptible *Staphylococcus* sp. by a relatively low number of biochemical tests, which include oxidase, alkaline phosphatase, urease, coagulase, sucrose, maltose, mannitol, mannose, trehalose, ribose, and susceptibility to 2 U of bacitracin/mL (1). The biochemical characteristics of *S. felis* are very similar to those of *S. simulans*, and bacitracin susceptibility is a useful property for distinguishing *S. felis* from this species. Also, production of acid from mannose seems

to be a constant property of *S. felis*, whereas it is not for strains of *S. simulans* recovered from cats and dogs (1).

Using the Kirby-Bauer method, we found that our isolates were susceptible to many antibacterial agents including penicillin. According to Igimi *et al* (1), all isolates of *S. felis* were highly susceptible to penicillin and ampicillin. They were also susceptible to erythromycin and chloramphenicol, and only one of 12 isolates was resistant to oxytetracycline (1). Coagulase-negative staphylcocci have not received a great deal of attention in veterinary medicine. Studies have been focused on the coagulase-positive species, but other members of this genus could also have a well-defined pathogenicity. The aim of this report is to make laboratory diagnosticians aware of interest in identifying significant coagulase-negative isolates.

Reference

1. Igimi S, Kawamura S, Takahashi E, Mitsuoka T. *Staphylococcus felis*, a new species from clinical specimens from cats. Int J Syst Bacteriol 1989; 39: 373–377.

Robert Higgins, Marcelo Gottschalk, *Faculté de médecine vétérinaire de l'Université de Montréal, Saint-Hyacinthe, Québec J2S 7C6*

Ontario

Proliferative and necrotizing pneumonia (PNP) of swine: the Ontario situation

Morin *et al* (1) have recently described a new type of pneumonia that has occurred in pigs in Quebec since the fall of 1988. The cause is unknown. On October 15, 1990, pathologists at the Veterinary Laboratory Services Branch, Guelph Laboratory, initially diagnosed this disease in two suckling pigs. As of January 4, 1991, an additional eight cases have been identified. These cases have involved eight farms and included 15 pigs. Feeder and farrowing enterprises have been approximately equally represented. One half of the affected pigs have been less than six weeks old (13 kg). The majority of the remainder have been less than 16 weeks old, with only one affected six-month-old gilt submitted. Histological lesions were similar to those described previously (1). They were complicated by secondary bacterial and mycoplasmal involvement and by differing appearance, which may be related to the stage of infection.

In Ontario, direct fluorescent antibody stains of lungs for respiratory syncytial virus (RSV), influenza A, influenza B, porcine respiratory coronavirus (PRCV), parainfluenza virus type 3 (PI3), and measles virus have been negative. Numerous attempts to isolate virus have recovered only porcine parvovirus from the lung of one pig. Acute and convalescent sera from affected swine from a single farm have demonstrated no seroconversion or significant four-fold rises in antibody titers for RSV, swine influenza (H1N1, H3N2), PRCV, PI3 or encephalomyocarditis virus.

Lungs of two of eight consignments have been positive in fluorescent antibody tests for *Mycoplasma hyopneumoniae*. *Mycoplasma arginini* and *M. hyorhinis* have been isolated from four of seven, and from six of seven consignments, respectively. Various bacterial pathogens have been isolated from lungs, particularly from those that have had features of concurrent suppurative bronchopneumonia.

Because PNP in swine is presently of unknown cause, laboratory diagnosis depends on pathological findings. This disease has now occurred sporadically in eight herds in Ontario. However, unlike the situation in Quebec, PNP in Ontario does not appear to be a significant cause of sudden or persistent production losses, at least at this stage of its recognition.

Reference

1. Morin M, Girard C, ElAzhary Y, Fajardo R, Drolet R, Lagace A. Severe proliferative and necrotizing pneumonia in pigs: A newly recognized disease. Can Vet J 1990; 31: 837–839.

Gary Thomson, Suzanne Carman, Veterinary Laboratory Services Branch, Ontario Ministry of Agriculture and Food, Box 3612, Guelph, Ontario N1H 6R8